IIED & nef round-table discussion: Can Voluntary Carbon Offsets Assist Development?
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# *Working Paper: The possibilities for combining mitigation and adaptation in vulnerable communities in the developing world*

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The management of climate change yields two alternative strategies: Mitigation, defined by the IPCC as any "anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gasses" (IPCC, 2001a:379); and adaptation, which "refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (IPCC 2001a: 365). Although the international negotiations now recognise the importance of *both* mitigative and adaptive strategies in managing climate change, the synergies between them are yet to be fully explored. This paper will consider the possibilities for uniting these alternative strategies in a set of projects that combine mitigation and adaptation within the Voluntary Carbon Market, and propose that the implementation of such 'hybrid' projects may be one way for the Voluntary Carbon Market to assist sustainable development in the most vulnerable developing countries.

## Mitigation, Adaptation, and Sustainable Development

To date, almost all efforts to address climate change have approached the issue as one of global, long term, environmental concern. As such, natural science strategies focusing on the mitigation of greenhouse gas emissions have dominated climate change management approaches, and the Voluntary Carbon Market has emerged as one of a number of global carbon trading mechanisms to have arisen from this mandate.

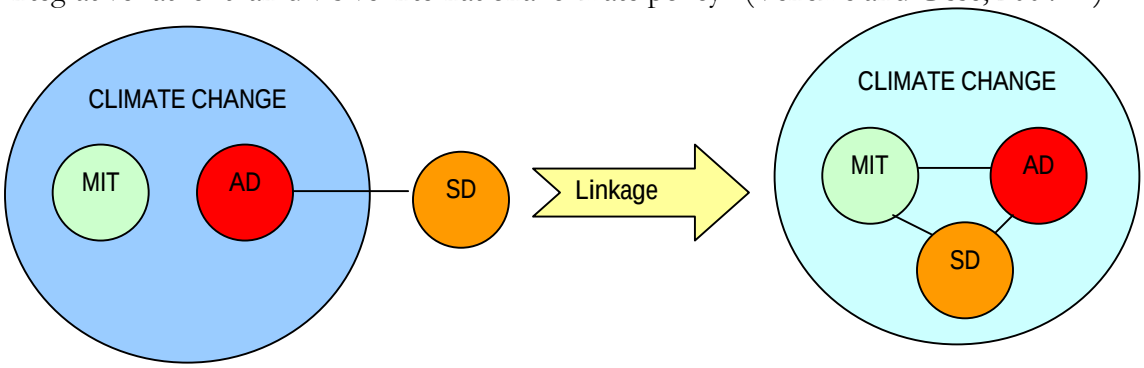
More recently, it has been recognized that even if the Kyoto Protocol were to be implemented in full and with immediate effect, a certain degree of anthropogenic climate change is inevitable. The impacts of global climate change will start being felt within the next few decades (and many argue they are already manifest), and the most vulnerable countries are those which are already the poorest and least able to adapt to these changes1. Thus, in addition to wide scale, long term mitigation, immediate, small-scale, local adaptation strategies against these inevitable impacts are urgently needed. Mitigation and adaptation are now seen as two sides of the climate change coin, and it is necessary for both developed and developing countries to engage effectively in both.

How does this relate to our discussion of voluntary carbon offsets assisting sustainable development (SD)? SD outcomes have typically been 'tacked on' to carbon offsetting projects hosted in developing countries to fulfil particular standards which have been externally imposed, because the mitigation agenda does not naturally lend itself to development concerns. Indeed, such development criteria reduce the cost-effectiveness of

1 The group of most vulnerable developing countries is usually taken to include the small island states, and the Least Developed Countries (LDCs), as well as those countries whose economies are heavily reliant on climate sensitive activities (Huq and Burton, 2003).

generating carbon credits, and in this sense are at odds with the global environmental agenda. While divorcing mitigation from development is somewhat artificial (after all, anthropogenic climate change is the result of increasing GHG emissions associated with economic and social development, and unsustainable development is one of the underlying causes of climate change) the divide nevertheless persists. (For more information on the Voluntary Carbon Market and its implications for sustainable development, please see the accompanying paper by Elizabeth Harris).

Adaptation, on the other hand, is very much development-focused; development pathways determine the degree of vulnerability to climate change (Huq et al, 2006) and the consequences of this vulnerability threatens the achievement of the Millennium Development Goals related to the eradication of poverty and hunger, health, and sustainable development. It is therefore development-led, often undertaken not just by environmental but by development and disaster management practitioners, and more likely to be small scale and community driven. It follows, then, that one way of encouraging mitigation approaches such as carbon offsets to assist sustainable development is to draw mitigation and adaptation policies and practice closer together. In doing so, we may take advantage of the fact that the adaptation agenda encourages climate change to be seen not just an environmental but also a development problem. By uniting mitigation and adaptation, we also unite mitigation (and therefore climate change in general) with sustainable development, encouraging development and environmental practitioners to work together, providing a "constructive focus for integrative rather than divisive international climate policy" (Veneme and Cisse, 2004: iii).




One way of achieving both adaptation and mitigation, whilst positively contributing to sustainable development, is to unite mitigation and adaptation activities together in 'hybrid' projects, and it is suggested here that the Voluntary Carbon Market is currently the best institutional mechanism for enabling their success. This will be explored through the country case-study of Bangladesh, one of the most climate-change vulnerable LDCs.

## Possibilities for Mitigation-adaptation 'hybrid' projects

Given the frameworks already in place, linkage projects may originate either in adaptation and have mitigation co-benefits (which will here be termed 'Ad-Mit) or begin as mitigation projects and have adaptation co-benefits (Mit-Ad). The merits of each system will be discussed in turn.

**Ad-Mit Projects**

To examine possibilities for Ad-Mit linkages at the national and regional scales in Bangladesh, we can look to the NAPA. The NAPA presents 15 Project Concept Notes, many of which show dual potential, for example project 1, "Reduction of Climate Change

through Coastal Afforestation with community participation". (MOEF 2005:61). While the rationale behind the project is that "The presence of forest plays a vital role in the stabilising shorelines and providing protection against cyclones and other extreme events", it also notes that one of the longer term outcomes of the project will be a contribution to "the global carbon sequestration aspect" (ibid:27). So in theory there is potential here.

However, if mitigation funds are to be used, the programme must fulfill mitigation criteria. The carbon sequestration potential must be calculated, and the verification and validation of this is an extremely lengthy and costly process. The defining feature of mitigation projects is that they must demonstrate "additionality", generating emissions reductions 'additional' to those that would otherwise have occurred under a 'business as usual' scenario (Taiyab, 2006:3). For Ad-Mit projects this is difficult to demonstrate because by definition the project would have occurred anyway for adaptation purposes, and mitigation benefits are positive by-products.

**Mit-Ad Projects**

Mit-Ad projects circumvent this problem of verification because the mitigation standards would have to be fulfilled anyway. The lack of adaptation standards is, however, problematic. Adaptation benefits are often closely aligned with sustainable development criteria, for example the IPCC suggests that enhancing adaptive capacity "involves similar requirements as promotion of sustainable development" (IPCC, 2001c:899, cited Veneme and Cisse, 2004:12). With this is mind, it might be argued that simply contributing to sustainable development in vulnerable areas is adaptation, and given that CDM projects necessitate sustainable development criteria, then simply implementing mitigation activity in a vulnerable area could be classed as contributing to both mitigation and adaptation. This raises attractively convenient possibilities.

However, this concept of adaptation is unsatisfactory if we actually want to increase adaptive capacity. An element of adaptive additionality must be present, with vulnerability to climate change being the primary reason for the project being carried out in that area. At first, it looks as if we may run up against a similar problem to Ad-Mit projects; it would be difficult to demonstrate that the reason behind a Mit-Ad project is adaptation when by definition it is mitigation. However, precisely because adaptation benefits may be similar to sustainable development benefits they may be done anywhere, so choosing to carry out a mitigation project in a vulnerable area where it would not have otherwise been carried out creates additional adaptation benefits. To reverse the example drawn from the NAPA, afforestation as a means of carbon sequestration may take place anywhere that land is appropriately available; however, if you choose coastal afforestation precisely *because* here it will protect coastal areas against climate change induced events, it may also be classed as adaptation. Thus, the choice of 'what' project satisfies mitigation standards; the choice of 'how' and 'why' satisfies adaptation standards. Of course, Mit-Ad projects will carry costs additional to those of pure mitigation projects, but these will not be as high as for Ad-Mit projects.

Mit-Ad projects are therefore preferable to Ad-Mit projects. Mitigation projects are currently being developed in three sectors in Bangladesh: Forestry; Energy; and Waste. This paper shall explore the promising and under-recognised possibilities for waste management, because as noted by Veneme and Cisse, the most significant potential for mitigation projects

in LDCs is in the waste sector, with landfill gas recovery and composting two leading sectors. (2004:139)

### Project possibilities

Waste sector projects mitigate climate change by preventing the release of methane from the bio-methanation process. This is significant because methane has a global warming potential 23 times the size of carbon dioxide (Forsyth, 2006: Forthcoming). In addition, waste management is a growing health and planning problem in developing countries (Forsyth, 2006: Forthcoming) so such projects also have sustainable development benefits.

Waste management mitigation projects in Bangladesh are coordinated by the research based NGO Waste Concern, who divide waste sector projects into four groups: i) Landfill Gas Recovery and Utilization; ii) Composting of municipal Waste; iii) Poultry Waste Management; and iv) Human excreta treatment (Co-composting). The most exciting opportunities for Mit-Ad activities currently exist for composting projects, for example the "Composting of Organic Waste in Dhaka", which was only the second CDM project to be registered in Bangladesh, and the first ever composting project globally. A summary of the project is presented in Box 1:

Box 1: Composting of Organic Waste in Dhaka
*Adapted from "Project Design Document Form (CDM PDD) Version 2".* (Waste Concern 2005a)

The project comprises of the design and building of a composting plant for waste from Dhaka city, with a maximum daily input of 700 tonnes. It serves the dual benefits of producing compost and reducing methane emissions by diverting organic waste from dumping at a landfill (where anaerobic processes occur which generate higher levels of methane) to a composting plant (where aerobic processes occur).

Such a project is highly suitable to the LDCs because like other LDC cities, the waste produced in Dhaka is mostly organic (80% of solid waste consists of organic substances). This has a high potential for bio-fertiliser (compost) production. The waste is collected by trained 'waste pickers', and delivered to the composting site where it is sorted, and composted, thus preventing uncontrolled dumping of waste, creating jobs (particularly for less educated women), and creating valuable compost which combats highly problematic land degradation.

[illegible] the adaptation benefits of this project. Applying compost increases the moisture holding capacity of dry soils, thus if this compost is laid onto land that has become increasingly drought-prone as a result of climate change, it will assist a community in adapting to climate change. What is needed is a mechanism through which to implement such hybrid projects, which will enable the extra-costs of verifying both mitigation and adaptation projects to be outweighed by the co-benefits. In addition, a set of Mit-Ad standards which make these projects verifiable are also needed. The Voluntary Carbon Market provides us with such an opportunity.

## Implementing these projects within the Voluntary Carbon Market

The Voluntary Carbon market is more conducive to the development of formal adaptation standards than mechanisms such as the Clean Development Mechanism, because the higher price demanded by the application of both mitigation and adaptation standards need not be a deterrent. The key is in the marketing potential provided by the VCM, because buyers of Voluntary Emissions Reductions (VERs) (companies, governments, NGOs and individuals) are by definition not required to meet externally imposed carbon emissions quotas. They purchase carbon credits for purposes other than regulatory targets, such as demonstrating institutional responsibility, or philanthropic reasons. Of value to these buyers is therefore not simply cheap carbon credits, but the 'story' behind them.

Mit-Ad projects provide a unique story which can be used to justify a premium price for the credits. Currently, the whole idea of carbon trading is intangible; we do not reduce our own emissions but offset them elsewhere; our investment is based on trust in the science of climate change, and a notion that as global citizens we should be doing our bit for the elusive global system. Some offset schemes yield sustainable development benefits,

which are promoted to encourage us connect to what we are investing in, but this connection is removed from the original point of the investment; it is a secondary outcome of sustainable development, while the primary reason behind our investment is concern for climate change.

Mit-Ad projects provide a way of uniting global emissions reductions with the impacts on the ground. When we buy Mit-Ad VERs, not only are we reducing future emissions into the global system, we are alleviating the local problems caused by our emissions of the past. Marketing such Mit-Ad credits might then be done in a similar way to the highly successful 'Fairtrade' market, for which consumers currently pay a premium price for the 'story' of their investment. Fairtrade coffee is bought on the premise that you have invested in a scheme that assists the growers of your coffee. The purchase is related to the investment. Likewise for Mit-Ad, you invest in VERs that both reduce future climate change impacts and contribute to the alleviation of those already occurring.

Of course, if Mit-Ad VERs are to be sold as 'premium' products, a verification system must be produced, because if buyers are to pay a premium price for such a product they must be confident of the credibility of the story they are buying into. This will increase the costs of the VERs, but as noted by Taiyab, "buyers and potential buyers are willing to pay a higher price for higher quality offsets", so such costs would be covered by the Mit-Ad premium. Adaptation standards therefore need to be finalised before such a scheme can be put in place, but it shows exciting potential for uniting both mitigation and adaptation incentives within a single programme on the ground.

This has benefits beyond simply aligning mitigation and adaptation incentives; it helps to engage more people in the North in both the environment and development issues in the South. While the global mitigation discourse, with its "highly technical and undifferentiated global basis…simply turns people off" (Demeritt, 2001:329), the united discourse 'puts a human face' to climate change, and highlights the inequitable distribution of climate change causes and impacts. This raises awareness of environmental vulnerability in the South, and the poverty and politics behind it. Thus, it provides a new avenue for action against poverty in general, as well as the strengthening of environmental awareness and ethics.

## For Discussion

This paper explores whether drawing on the synergies between mitigation and adaptation activities may be one way of ensuring that both are prioritized and achievable for the industrialized and the developing countries, whilst providing an avenue for assisting sustainable development through the Voluntary Carbon Market. The following points and questions are raised for discussion:

1. Does this idea make sense? Is it useful and worth pursuing?
2. Which buyers would the Mit-Ad credits be targeted at, and would they be interested?
3. Would NGOs be interested in developing the product?
4. What sort of verification system would be needed, and is this achievable? What would be the costs and trade-offs?
5. What other challenges and barriers are there to pursuing this idea further?

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